

BY Cont.
AS Cont.
a cable adapter attachable to the outer surface of the first electrical cable, the cable adapter located on the outer surface at a position remote from the exterior end of the electrical cable to leave exposed a portion of the outer surface of the electrical cable adjacent the exterior end thereof; [and]

a sleeve having a first end, a second end, a fluid injection port and a hollow interior, the first end of the sleeve adapted to fit over the exposed portion of the outer surface of the electrical cable adjacent the exterior end thereof, the second end adapted to fit over a conductor contact which is attached to the central conductor portion of the electrical cable, such that the sleeve creates a fluid tight seal for passage of repair fluid into or out the fluid injection port[.]; and

a housing encasing the sleeve to seal the sleeve within the housing.

SUB
28. (Amended) The connector of Claim 27, wherein the tube includes a restraint integrally formed with the tube to resist withdrawal of the tube from [within] the fluid injection port.

REMARKS

This amendment responds to the Office Action mailed June 7, 2000. Claims 1-33 are pending in the application. In the Office Action, the drawings were objected to under 37 C.F.R. § 1.83 and 37 C.F.R. § 1.84. Claims 1-13 and 24 were rejected under 35 U.S.C. § 112, first paragraph. Claims 1-13, 17, and 23-33 were rejected under 35 U.S.C. § 112, second paragraph. Claims 1, 2, 10, 12, 14, 21, and 23 were rejected under 35 U.S.C. § 102(b). Claim 25 was rejected under 35 U.S.C. § 102(b). Finally, independent Claim 25 was also rejected under 35 U.S.C. § 103(a). Claims 1, 2, 6, 9-14, 17, 23-25, and 28 have been amended above to clarify the invention.

In view of the above amendments and the remarks set forth below, applicants respectfully request reconsideration and submit that all claims are now in condition for allowance.

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Before distinguishing the issues of the Office Action, applicants briefly summarize at least one embodiment of the present invention. The exemplary embodiment is generally directed to a connector that includes a conduit having open ends. Each open end of the conduit is adapted to receive an end of a first cable, wherein the conduit includes a hollow interior to permit passage of fluid therethrough. The connector also includes a second conduit that *encases* the first conduit to seal the first conduit within the second conduit. Such a connector is generally recited in amended independent Claims 1, 14, and 25.

Support for the above amendments to each of the claims as generally found in the application on pages 14-17. Further support for the amendments is found in at least Figure 23, wherein the splice housing 180 encases the injection sleeve 192. Thus, the claims of the present application are generally directed to a connector that includes at least two conduits, wherein the second conduit *encases* and seals the first conduit therein.

Objections to Drawings

The drawings stand objected to under 37 C.F.R. § 1.83(a). Further, the drawings are objected to as failing to comply with 37 C.F.R. § 1.84(p)(5). With regards to the objections under 37 C.F.R. § 1.83(a), the Office Action sets forth the position that the feature of the a second conduit having open ends, each open end adapted to receive the interior end of a second cable, must be shown or the feature cancelled from Claims 13 and 24.

In response, applicants refer to Figure 23, wherein the splice housing 180 extends between the cable 120 and the splice base 182. Note that one end of the splice housing 180 includes the cable 120 extending therethrough, while the splice base 182 extends through the other end of the splice house 180. Support is further found in the specification, wherein the cable splice 178 "includes splice housing 180, a hollow member that is removably attachable to splice base 182." Page 15, lines 4-6. As a result, applicants respectfully submit that Claims 13

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and 24 are fully supported by both the application, including Figure 23, as originally filed. Accordingly, applicants respectfully traverse this objection under 37 C.F.R. § 1.83(a).

The drawings were also objected to as failing to comply with 37 C.F.R. § 1.84(p)(5) because the reference "176" is missing from the drawings. In response, applicants respectfully request that the Examiner approve the amendments to Figure 23. As seen in the enclosed drawing, Figure 23 has been amended to include the reference number "176" extending to the injection fitting 176. Further, a reference lead line extending between the reference number "192" to the injection sleeve was inadvertently excluded from the drawing. In view of the foregoing amendments to Figure 23, applicants respectfully submit that the objection to the drawings under 37 C.F.R. § 1.84(p)(5) has been overcome.

The drawings also stand objected to as failing to comply with 37 C.F.R. § 1.84(p)(5) because the reference numeral "204" is not mentioned in the description. Applicants regret this oversight and have amended the specification accordingly. Thus, applicants respectfully submit that the objection to the drawings under 37 C.F.R. § 1.84 (p)(5) has been overcome.

In view of the above amendments and remarks, applicants respectfully submit that all objections to the drawings under 37 C.F.R. § 1.83 and 37 C.F.R. § 1.84 have been overcome.

Rejections under 35 U.S.C. § 112

Claims 1-13 and 24 stand rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way to enable one skilled in the art to which it pertains to make and/or use the invention. Specifically, the Office Action sets forth the position that the specification does not provide a written description to describe how each end of the conduit is adapted to receive an interior end of the first cable as claimed in Claim 1 because the first cable has only one interior end. With regard to Claims 13 and 24, the Office Action concludes that the specification also does not provide a written description to

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describe how each open end of the second conduit is adapted to receive an interior end of the second conduit because the cable has only one interior end. In view of the following comments, applicants respectfully traverse these rejections under 35 U.S.C. § 112, first paragraph.

Turning first to Claim 1, applicants respectfully note that each open end of the first conduit is adapted to receive the interior end of the first information transmitting cable. Applicants respectfully note that this does not mean that both ends *simultaneously* receive the interior end of the first information transmitting cable. Instead, both ends are *capable* of receiving the interior end of the first information transmitting cable. Thus, the interior ends of two different cables may be received within one of the ends of the first conduit.

Similarly, with regards to Claims 13 and 24, applicants respectfully note that the second conduit and second sleeve, of Claim 13 and 24, respectively, include open ends, wherein each open end is adapted to receive the interior end of the second cable. Again, applicants respectfully note that this does not mean that the ends of the second conduit or second sleeve *simultaneously* receive the interior end of a second cable. Thus, the ends of the first conduit, second conduit, and second sleeve are adapted to receive the interior end of either a first information transmitting cable or a second cable. Accordingly, applicants respectfully traverse the rejection of Claims 1-13 and 24 under 35 U.S.C. § 112, first paragraph.

Claims 1-13, 17, and 23-33 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. Numerous rejections to the claims under 35 U.S.C. § 112, second paragraph, have been set forth in the Office Action. Applicants regret the basis for the rejections and address each one of the rejections in the following paragraphs.

As generally understood by applicants, Claims 1, 12, 13, 23, and 24 stand rejected for the same general ambiguity. With regard to the rejection of Claim 1, applicants reassert the

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argument above, wherein either end of the first conduit can receive the interior end of the first cable. Again, applicants respectfully submit that this does not necessarily mean that the interior end of the first cable is simultaneously inserted in both ends of the first conduit, but instead, only that either end can receive the interior end of the first cable.

Claims 12, 13, and 24 appear to be rejected under 35 U.S.C. § 112, second paragraph, for the general ambiguity of Claim 1. In particular, confusion appears to exist because it is unclear how each end is capable of receiving an interior end of a cable when the cable has only one such interior end. For conciseness, applicants respectfully reassert the foregoing argument with regard to Claim 1.

With regard to Claim 23, the Office Action sets forth the position that it is unclear how the open end of the sleeve relates to the first and second open ends. In response, applicants have amended Claim 23 to clarify the invention by generally reciting that when the first electrical cable is received within one of the first or second open ends of the sleeve, the second cable is adapted to be received within the other of the open ends of the sleeve. Thus, if the first cable is in one end of the sleeve, the second cable may be received in the other end of the sleeve.

Claims 6, 13, 17, 25, and 28, all stand rejected under 35 U.S.C. § 112, second paragraph, because of various ambiguities. Applicants thank the Examiner for suggested clarification amendments and have amended each claim accordingly.

In light of the foregoing remarks and amendments, applicants respectfully submit that the rejection of Claims 1-13, 17, and 23-33 under 35 U.S.C. § 112, second paragraph, have been overcome.

Rejections under 35 U.S.C. § 102

Independent Claims 1 and 14 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,943,685, issued to Reynaert. Further, Claim 25 stands rejected

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under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 3,816,641, issued to Iversen. In view of the amendments above and the remarks that follow, applicants respectfully submit that each of the foregoing claims are not anticipated by either Reynaert or Iversen.

1. U.S. Patent No. 4,943,685, issued to Reynaert.

Reynaert discloses a cable splice 10 joining two cable sections 12 and 14. A tubular housing member 26 is applied over the strip end of the cable sections 12 and 14 with the ends of the housing member 26 clamped to sheaths 22 of the cable sections by any suitable means, such as a hose clamp 28. The housing member 26 defines a space around the splice which is filled with a suitable potting compound 30. Thus, Reynaert discloses a cable splice that includes a housing attached to two sections of cables, such that a potting compound may fill the interior of the housing.

Applicants respectfully submit that the cable splice of Reynaert does not anticipate or render obvious the invention of amended independent Claims 1 and 14. Reynaert fails to teach or suggest a connector having first and second conduits, wherein the second conduit encases the first conduit to seal the first conduit within the second conduit, as now generally recited in amended Claim 1. Further, Reynaert fails to teach or suggest a connector that includes a sleeve and a housing encasing the sleeve to seal the sleeve within the housing, as now generally recited in amended Claim 14. Instead, Reynaert merely teaches sealing a cable splice by a *single* housing and filling the housing with a potting compound. Therefore, because Reynaert does not teach or suggest the connector of either amended Claim 1 or 14, applicants respectfully submit that each of the foregoing claims, as well as those claims dependent therefrom, are not anticipated by Reynaert.

Applicants further submit that the invention of amended Claims 1 and 14, is also nonobvious over the disclosure of Reynaert, whether taken alone or in hypothetical combination

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with the other references of record. As noted above, Reynaert fails to teach or suggest a connector having first and second conduits, wherein the second conduit encases the first conduit to seal the first conduit within the second conduit, as generally cited in amended Claim 1. Further, Reynaert fails to teach or suggest a connector that includes a sleeve and a housing, wherein the housing encases the sleeve to seal the sleeve within the housing, as generally recited in amended Claim 14. Applicants respectfully note that there is no disclosure or suggestion within Reynaert of a need or desire of a connector as set forth in amended Claims 1 and 14. Thus, applicants respectfully that Reynaert fails to teach or suggest the invention of amended Claims 1 and 14.

2. U.S. Patent No. 3,816,641, issued to Iversen.

As set forth in the Office Action, Iversen discloses a connector (Figure 5) for passing repair chemical through at least a first cable that has an outer surface, an interior end, an exterior end and a central conductor portion. As part of the method of making the connector, Iversen teaches that the assembly is placed in a cylindrical mold 86. Column 3, lines 54-55. An epoxy compound is poured into the mold 86 to form a position-fixing member 50. Column 4, lines 57-59. The member 50 is constructed of a hard insulative material, such as an epoxy compound, and is potted around the wires and braided shield 48. Column 4, lines 1-3. The member 50 supports both the preform 14 and cable sheath 28 against forward movement further into the connector shell 16. Column 3, lines 13-15. Thus, Iversen merely teaches an underwater connector that includes a hard insulative material 50 and a connector shell 16. Applicants respectfully submit that this is not the invention of amended Claim 25.

As a first matter, applicants respectfully note that there is absolutely no teaching or suggestion within Iversen of a connector for passing repair chemicals through electrical cables, as originally recited in the preamble of Claim 25. Further, there is absolutely no teaching or

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suggestion of a connector that includes a sleeve having a fluid injection port and a housing encasing the sleeve to seal the sleeve within the housing, as now recited in amended Claim 25. Rather, Iversen teaches a mold 86 (Figure 5) used to form a hard member 50, wherein the mold 86 is removed from the cable section and is then placed within a connector shell 16. Therefore, applicants respectfully submit that amended Claim 25 is not anticipated by Iversen.

Applicants further submit that the invention of amended Claim 25 is also nonobvious over the disclosure of Iversen, whether taken alone or in hypothetical combination with the other references of record. As noted above, Iversen fails to teach or suggest a connector for passing repair chemicals through a cable, as originally cited in Claim 25. Further, there is absolutely no teachings or suggestion within Iversen of a connector that includes a sleeve having a fluid injection port and a housing encasing the sleeve to seal the sleeve within the housing, as now recited in amended Claim 25. Thus, because there is absolutely no disclosure or suggestion within Iversen of a need or desire of a connector as set forth in amended Claim 25, applicants respectfully submit that Claim 25 is nonobvious in view of Iversen.

Rejections under 35 U.S.C. § 103

Claim 25 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Reynaert in view of U.S. Patent No. 4,764,232, issued to Hunter. The Office Action sets forth the position that it would have been obvious to use the cable adapter of Hunter in the connector of Reynaert, such as providing the sleeve 26 of Reynaert between the elements 24 and 32 of Hunter, to provide a fluid tight seal between the sleeve and the cable without using hose clamps. Applicants respectfully disagree.

As discussed above, the primary reference merely teaches a cable splice that includes a housing adapted to receive potting compound therein. Hunter discloses a closure 10 for sealing a splice 12 between two cables 14 and 16. Each cable 14 and 16 has a plurality of individual

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insulated wire conductors 18 and 20. The wire conductors 18 and 20 are joined by connectors 22. In forming the closure, sealant tape 24 is wrapped around each of the cables 14 and 16. At one end 26 of the closure 10, a hollow pressure measuring tube 28 is placed upon the sealant tape 24. Another layer of sealant tape 31 is then wrapped around the pressure measuring tube 28 and cable 16. A flexible reservoir 30 is then positioned around the splice 12. Curable liquid sealant 34 is introduced into the interior of the flexible reservoir 30. It is desirable that the reservoir 30 be maintained under pressure for a sufficient period of time to permit the liquid sealant 34 to cure. Curing of the liquid sealant 34 allows the sealant 34 to permanently remain at its predetermined level even if the pressure measuring tube 28 should be punctured or unsealed at some later time. Applicants respectfully submit that combining the foregoing references would not yield the invention of amended Claim 25.

Applicants respectfully note that there is absolutely no teaching or suggestion within either Reynaert or Hunter of a connector for passing repair chemicals *through* a first electrical cable, as originally recited in the preamble of Claim 25. Moreover, there is absolutely no teaching or suggestion within either Reynaert or Hunter of a connector that includes a sleeve having a fluid injection port for passing repair fluid into and out of the injection port, as also originally recited in Claim 25. Finally, there is absolutely no teaching or suggestion in either of the cited references of a connector that includes a sleeve and a housing encasing the sleeve to seal the sleeve within the housing, as now recited in amended Claim 25.

For at least the foregoing reasons, applicants respectfully submit that the hypothetical combination of Reynaert and Hunter fails to teach or suggest the connector of Claim 25, both as originally filed and as amended herein. Accordingly, applicants submit that Claim 25 is patentable over the cited references of record.

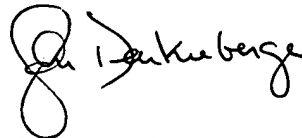
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CONCLUSION

In light of the foregoing amendments and remarks, applicants respectfully submit that the present application is now in condition for allowance. Applicants respectfully request entry of the amendments and reconsideration and allowance of all claims. The Examiner is invited to telephone the undersigned attorney if there are any remaining issues.

Respectfully submitted,

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